

## **Determination of Public Land (Rangeland) Health for 65059 COMANCHE HILL SOUTH**

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate the local indicators were completed for this allotment. Based on the assessments, it is my determination that the public land within the Comanche Hill South allotment #65059 meets the Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered and Special Status Species standard. The southern site has small and limited riparian areas on public land that meet the Riparian standard.

/s/ T. R. KREAGER

Assistant Field Manager

08/10/2004

Date

# Standards of Public Land Health

## Evaluation of 65059 COMANCHE HILL SOUTH

### Allotment

[ 03/17/2004 ]

The Roswell Field Office conducted rangeland health assessments at two (2) study sites within the Comanche Hill South Allotment #65059. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
65059-DF18-C050	X			X			N/A		
65059-NM21-C051	X			X			X		

Twenty-two (22) indicators for Rangeland Health were evaluated for the Comanche Hill South allotment; 10 of these assessed soil/site stability, 11 assessed hydrologic functions and 13 assessed biotic integrity. These qualitative assessments along with quantitative information from two areas on the allotment were utilized to assess the rangeland health of the public land within the allotment. This allotment is a "C" category (custodial) because of the small amount of public land within the allotment.

The indicators on the northern site rated in the None to Slight to Moderate categories. But none of these exhibit any real concern at the moment. Favorable precipitation events would further augment this site's potential. The low presence of grama grasses is evident however on this soil type tobosa and burrogras may dominate. However the reproductive capability of the perennial plants to reproduce was not limited. There was a generous amount of physical crusting which may be holding the soil in place until favorable climatic conditions return. This site is a Loamy SD-3 and exhibits some prickly pear (*Opuntia* spp.) encroachment but not to the level of limiting this site's potential.

The gypsic soils of the HOLLOMEX-Gypsumland association greatly influence the vegetative community found on this site. Tobosa, burrograss and gyp grammas are dominant. Gyp Upland ecological site inclusions are scattered within this area. These inclusions are on the more shallow to very shallow soil.

The northern site lies on the upland slopes above the Pecos River. The slopes above the river are steep and have naturally occurring drainages with some being quite large with steep side slopes. The bottoms of these drainages are vegetated with alkali sacaton and giant sacaton grasses.

The tracts of public land in the southern part of the allotment support Gyp Upland SD-3 ecological sites on the upper slopes and grade into a Salt Flats SD-3 ecological site in the lower area. Large bare patches with a salt crust are prevalent in the lower areas; alkali sacaton dominates in bands around these areas.

A series of alkaline lakes occur on the private and state land along the Pecos River flood plains in this area. To this extent the Riparian standard may be applied to this area.

Wildlife/Biotic - Evaluation of the integrity of the biotic community considered several indicators as attribute indices for the area of interest. Biotic indicators are interrelated with several other indicators, including soil/site stability, hydrologic function, and vegetation. Several indicators are singularly biotic and address the vegetation aspect of the ecological site, such as Functional/Structural Groups and Plant Mortality & Decadence, as described above. In addition to the standard worksheet biotic factors, four specific wildlife indicators are included in the biotic evaluation.

The area lies east of the Pecos River on the Comanche escarpment. Access is limited due to land status pattern.

Hydrology - Pasture DF18 - The pedestals and/or terracette indicator rated as moderate. The recent dry conditions in combination with wind and water erosion has possibly decreased the amount of plant cover and possibly decreased infiltration into the soils which may have increased the amount of pedestaling of plants and rocks. The bare ground indicator rated as moderate. The amount of bare ground has possibly increased due to recent dry conditions and also wind and water erosion processes. The litter amount rated in the moderate category. The decrease in litter amount suggests that the dry conditions have had a negative affect on the growing conditions which decreases the amount of litter that is produced. Additionally, the decrease in litter amount can have the effect of increasing the amount of bare soil. All other indicators rated as none to slight or slight to moderate. Gypsum, mudstone, and dolomite deposits of the Seven Rivers Formation outcrop in the area.

Pasture NM21 - The pedestals and/or terracette indicator rated as moderate. The recent dry conditions in combination with wind and water erosion has possibly decreased the amount of plant cover and possibly decreased infiltration into the soils which may have increased the amount of pedestaling of plants and rocks. The bare ground indicator rated as moderate. The amount of bare ground has possibly increased due to recent dry conditions and also wind and water erosion processes. Soil surface resistance to erosion rated in the moderate category. Organic matter is lacking on this site, but this is expected for an area that has a small amount of litter present. The soil surface loss or degradation has rated out as moderate. The recent dry conditions, decrease in the strength of physical

crusts and or absence of soil crusts, wind velocity, surface dryness, and the decreased amount of surface plant cover has possibly increased soil surface loss to degradation. The litter amount rated in the moderate category. The decrease in litter amount suggests that the dry conditions have had a negative affect on the growing conditions which decreases the amount of litter that is produced. Additionally, the decrease in litter amount can have the effect of increasing the amount of bare soil. Gypsum, mudstone, and dolomite deposits of the Seven Rivers Formation outcrop in the area. Sand and gravel deposits of Quaternary deposits outcrop in the area. It is the professional opinion of the Assessment Team. that the public land within the Comanche Hill South allotment meet the Upland and Biotic standards. South area meets the Riparian standard.

**Recommendations:**

RFOs Upland and Biotic Standard Assessment Summary Worksheet						
SITE 65059-DF18-C050						
Legal Land Desc	NENE 1 0110S 0250E Meridian 23		Acreage		496	
Ecosite	042CY007NM LOAMY SD-3		Photo Taken		N	
Watershed	13060007010 GOPHER					
Observers	SPAIN/NAVARRO		Observation Date		03/17/2004	
County Soil Survey	NM666 CHAVES SOUTH		Soil Var/Taxad			
Soil Map Unit	HrC		Soil Taxon Name		HOLLOMAN	
Texture Class	NM666 L		Soil Phase		HOLLOMAN- GYPSUM LAND	
Texture Modifier	NM666 LOAM					
Observed Avg Annual Precipitation			Observed Avg Growing Season Precipitation			
NOAA Annual Precipitation	11.27		NOAA Growing Season Precipitation		7.64	
NOAA Avg Annual Precipitation	13.53		NOAA Avg Growing Season Precipitation		11.18	
Disturbances and Animal Use:						
<b>Part 2. Attributes and Indicators</b>						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extrem e	Moderat e to Extreme	Moderat e	Slight to Moderat e	None to Slight
S H	Rills				X	
Comments :	Naturally occurring rills and gullies occurring on west side on slopes above the bottoms					
S H	Water Flow Patterns				X	
Comments :						
S H	Pedestals and/or Terracettes			X		

Comments :						
S H	Bare Ground			X		
Comments :	Toward upper end of range. Influenced by drought conditions					
S H	Gullies					X
Comments :	Gullies are natural part and have vegetative cover					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments :						
H	Litter Movement				X	
Comments :						
S H B	Soil Surface Resistance to Erosion				X	
Comments :						
S H B	Soil Surface Loss or Degradation				X	
Comments :						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments :						
S H B	Compaction Layer					X
Comments :						
B	Functional/Structural Groups				X	
Comments :	ATCA2, Ephedra, HIMU2, SCbr2, Opuntia, MUTO2, BOBR and YUCCA					
B	Plant Mortality/Decadence					X
Comments :	Less than 20%					
H B	Litter Amount			X		

Comments :	Lower end of range					
B	Annual Production			X		
Comments :	40 to 60% of potential					
B	Invasive Plants			X		
Comments :	Scattered mesquite, opuntia and some thistle					
B	Reproductive Capability of Perennial Plants				X	
Comments :						
S	Physical/Chemical/Biological Crusts				X	
Comments :	Both physical and biological crusts. Biological crust is influenced by the gyp soils					
B	Wildlife Habitat				X	
Comments :						
B	Wildlife Populations				X	
Comments :						
B	Special Status Species Habitat					X
Comments :	None known to occur					
B	Special Status Species Populations					X
Comments :	None known to occur					
<b>Part 3. Summary</b>						
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.						
Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight

S	Soil	0	0	2	5	3
H	Hydrologic	0	0	3	6	2
B	Biotic	0	0	3	6	4
<p>B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the <i>Does not Meet</i> column, Moderate becomes <i>May Need More Info</i>, and Slight to Moderate and None to Slight merge to form the <i>Meets</i> columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.</p>						
Attribute	Rationale	Does Not Meet	May Need More Info	Meets		
Soil		0	2	8		
Hydrologic		0	3	8		
Biotic		0	3	10		
<p>Site Notes: Pronghorn observed. Evidence of rodent/rabbits.</p>						



RFOs Upland and Biotic Standard Assessment Summary Worksheet						
SITE 65059-NM21-C051						
Legal Land Desc	NESW 11 0110S 0250E Meridian 23		Acreage		596	
Ecosite	042CY036NM SALT FLATS SD-3		Photo Taken		Y	
Watershed	13060007010 GOPHER					
Observers	SPAIN/NAVARRO		Observation Date		03/17/2004	
County Soil Survey	NM666 CHAVES SOUTH		Soil Var/Taxad			
Soil Map Unit	Hp		Soil Taxon Name		HOLLOMAN	
Texture Class	NM666 L		Soil Phase		HOLLOMAN- GYPSUM LAND	
Texture Modifier	NM666 LOAM					
Observed Avg Annual Precipitation			Observed Avg Growing Season Precipitation			
NOAA Annual Precipitation	11.27		NOAA Growing Season Precipitation		7.64	
NOAA Avg Annual Precipitation	13.53		NOAA Avg Growing Season Precipitation		11.18	
Disturbances and Animal Use:						
<b>Part 2. Attributes and Indicators</b>						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extrem e	Moderat e to Extreme	Moderat e	Slight to Moderat e	None to Slight
S H	Rills					X
Comments :						
S H	Water Flow Patterns				X	
Comments :						

S H	Pedestals and/or Terracettes			X		
Comments :						
S H	Bare Ground			X		
Comments :						
S H	Gullies					X
Comments :						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments :						
H	Litter Movement				X	
Comments :						
S H B	Soil Surface Resistance to Erosion			X		
Comments :						
S H B	Soil Surface Loss or Degradation			X		
Comments :						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments :						
S H B	Compaction Layer				X	
Comments :	More compaction may occur if livestock are concentrated during wet periods.					
B	Functional/Structural Groups				X	
Comments :	ATCA2 missing and some salt cedar is present					
B	Plant Mortality/Decadence					X
Comments :						

H B	Litter Amount			X		
Comments :						
B	Annual Production			X		
Comments :						
B	Invasive Plants			X		
Comments :	Mesquite					
B	Reproductive Capability of Perennial Plants					X
Comments :						
S	Physical/Chemical/Biological Crusts				X	
Comments :	Physical, Chemical (salt) and biological crusts are present.					
B	Wildlife Habitat				X	
Comments :						
B	Wildlife Populations				X	
Comments :						
B	Special Status Species Habitat					X
Comments :	None known to occur					
B	Special Status Species Populations					X
Comments :	None known to occur					
<b>Part 3. Summary</b>						
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.						
Standard Attribute		Extreme	Moderate to	Moderate	Slight to Moderate	None to

			Extreme		e	Slight
S	Soil	0	0	4	3	3
H	Hydrologic	0	0	5	4	2
B	Biotic	0	0	5	4	4
<p>B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the <i>Does not Meet</i> column, Moderate becomes <i>May Need More Info</i>, and Slight to Moderate and None to Slight merge to form the <i>Meets</i> columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.</p>						
Attribute	Rationale		Does Not Meet	May Need More Info	Meets	
Soil			0	4	6	
Hydrologic			0	5	6	
Biotic			0	5	8	
Site Notes:						

Comanche Hill South Northern Site





# Comanche Hill South Southern Site

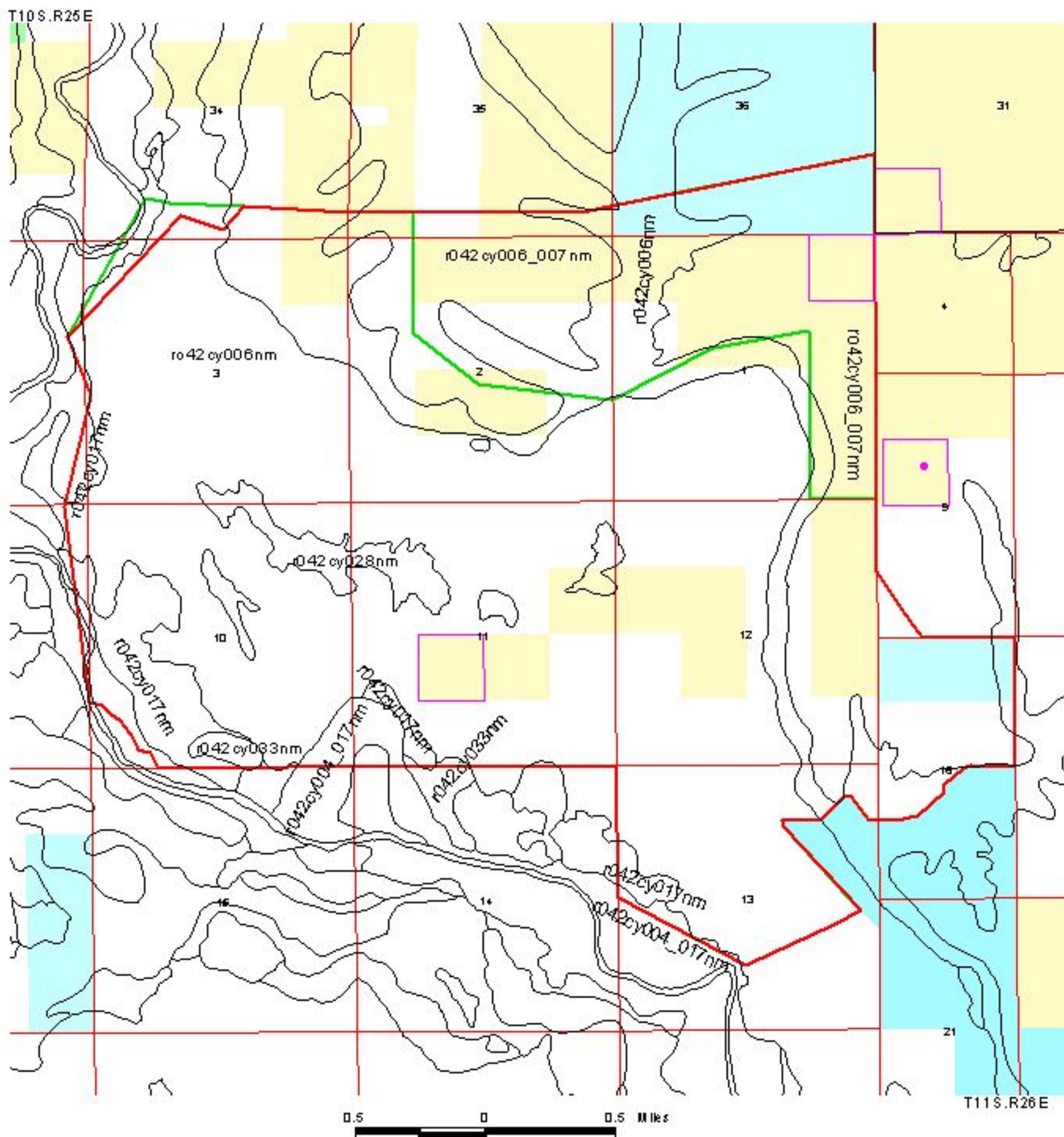






# Rangeland Health Assessment Ecological Sites

## Allotment 65059



Public



State



Study Locations



Private



FWS



Study Plots



Pasture Boundary



Ecological Sites



Allotment Boundary

Produced by the Roswell Field Office  
GIS Intern on July 2, 2003.

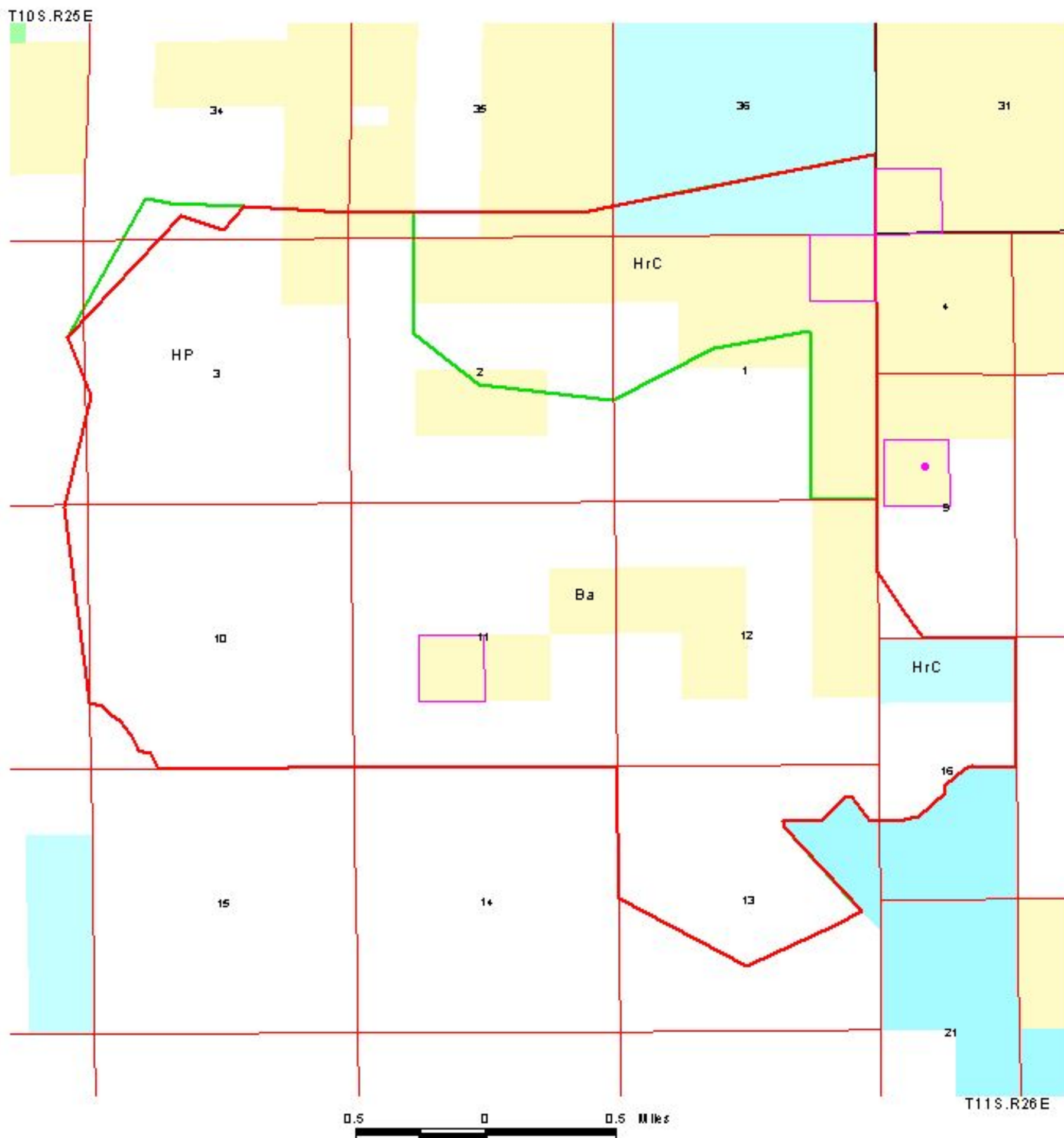
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# Rangeland Health Assessment Soil Mapping Units



Allotment 65059



Public



State



Study Locations



Private



FWS



Study Plots



Pasture Boundary



Soil Mapping Units



Allotment Boundary

Produced by the Roswell Field Office  
GIS Intern on July 2, 2003.

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